

PATENT CLAIMS

1. A method for testing the cleaning effect of a compound or compositions containing said compound, said method comprising:

- (a) preparing a liquid sample of less than 10 ml comprising said compound,
- (b) applying said liquid sample to a stained surface,
- (c) applying mechanical stress to said stained surface by contacting said stained surface with a body present in said liquid sample,
- (d) evaluating the cleaning effect of applying solution and mechanical stress on said stained surface.

2. The method of claim 1, wherein the test compound is selected from the group consisting of enzymes, enzyme stabilizers, enzyme inhibitors, enzyme enhancers, enzyme co-factors, builders, builder systems, bleach systems, bleach activators, metal-containing bleach catalyst, optical brighteners, nonionic -, anionic -, cationic -, zwitterionic and amphoteric surfactants, fabric softening agents, softening clays, clay flocculants, dye-transfer inhibiting agents, polymeric soil release agents, clay soil removal agents, anti-soil redeposition agents, polymeric dispersing systems, chelating agents, alkoxylated polycarboxylates, perfumes, perfume systems, carrier systems, dyes and pigments, fabric care agents and color care agents.

3. The method of claim 2, wherein the enzymes are alkaline.

4. The method of claim 1, wherein the liquid sample has a volume selected from 5 - 95% of the volume of 3.7 ml, 320 μ l, 160 μ l, and 14 μ l, respectively.

5. The method of claim 1, wherein the surface is an inorganic surface selected from metal, ceramic, glass, enamel concrete, rock, marble, gypsum and composite combinations thereof or an organic surface selected from plastic, rubber, wood, paper, leather, fur, paint and fabric.

6. The method of claim 5, wherein the surface is a fabric.

7. The method of claim 6, wherein the fabric is made from natural plant fibers, animal based fibres or synthetic fibres or combinations thereof.

8. The method of claim 7, wherein the fabric is woven or non-woven.

9. The method of claim 8, wherein the fabric is a cellulose containing fabric selected from textiles and tissues or an animal based fabric.

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10. The method of claim 1, wherein the stain comprises a traceable compound or composition associated to the surface.

11. The method of claim 10, wherein the stain is a traceable compound or composition associated to the surface.

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12. The method of claim 10, wherein the traceable compound is selected from light absorbing dyes, fluorescent dyes, radioactive compounds, reactive compounds and catalysts or activators capable of performing measurable interaction with substrates.

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13. The method of claim 10, wherein the traceable compound is comprised in a particulate composition, preferably carbon particles or iron oxide particles.

14. The method of claim 10, wherein the traceable compound is in a soiling composition.

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15. The method of claim 14, wherein the soiling composition is selected from naturally occurring soiling and processed soilings thereof.

16. The method of claim 15, wherein the soiling composition is a natural occurring soiling selected from grass, mud, clay, coffee, tea, blood, egg, lard and moulds

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17. The method of claim 15, wherein the soiling composition is a processed naturally occurring soiling selected from butter, processed meat, dyed lard, oil, make up, spice blends, processed tomatoes (ketchup or puree), chocolate, ice cream, cacao, baby food, refined protein compositions, refined polysaccharide compositions, refined fatty acid compositions, refined triglyceride compositions.

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18. The method of claim 1, wherein the body comprises a metal, more preferably a ferromagnetic metal, more preferably iron or alloys thereof.

19. The method of claim 18, wherein the body has a surface comprising at least one edge or corner.

20. The method of claim 1, wherein the stained surface is placed at the top or the bottom of the container.

21. The method of claim 20, wherein the stained surface functions as a cover on an opening in the container.

22. The method of claim 1, wherein the mechanical stress is applied by moving the body against the surface.

23. The method of claim 22, wherein the liquid sample applied to the stained surface by moving the body against the surface and depositing liquid sample adhering to the moving body.

24. The method of claim 23, wherein the body is moved by repeatedly applying a force to the body.

25. The method of claim 24, wherein the force is an oscillating force selected from randomly oscillating force and periodically oscillating force.

26. The method of claim 24 and 25, wherein the force is selected from magnetic force, electromagnetic force, electrical force, mechanical force and combinations thereof.

27. The method of claim 26, wherein the force is a magnetic force applied to a magnetizable body by moving a magnet relative to the container containing the body.

28. The method of claim 26, wherein the force is a mechanical vibration force applied to an assembly comprising body, container and stained fabric.

29. A device suitable for testing cleaning effect of a composition, said device comprising:

(a) at least one container having a volume of less than 10 ml, preferably less than 2 ml, most preferably less than 0.2 ml,

- (b) at least one body capable of moving inside the container,
- (c) at least one stained surface, preferably a stained fabric and
- (d) means for providing movement of the body relatively to the stained surface.

5 30. An assembly suitable for use in the device of claim 29 comprising at least one container and a stained coherent fabric, wherein the container comprises at least one opening covered with the stained coherent fabric.

10 31. The assembly of claim 30, comprising an array of containers, wherein each container comprises one or more openings and wherein the stained coherent fabric covers at least one of the openings in each container.

32. The assembly of claim 31, further comprises least one body in each container.

15 33. The assembly of claim 31, wherein the array of containers is a micro plate selected from 24, 96, 384 or 1536 well micro plates.

20 34. The assembly of claim 30, wherein the stained coherent fabric have a dimension within 0.2-10 cm by 0.2-15 cm, preferably a dimension enabling the stained fabric to cover all the wells in the micro plate.

35. The assembly of claim 30, further comprising a support lid located in the assembly so that the coherent stained fabric is positioned between the support lid and the container opening.

25 36. The assembly of claim 31, wherein the interconnecting surface between containers in an array and the surface of the support lid facing the fabric and the container opening are unparallel.

30 37. The assembly of claim 30, further comprising means for providing mechanical stress to the stained fabric.

38. The assembly of claim 37, wherein the means for providing mechanical stress comprises a piston-cylinder constructions, which by movement of the piston cylinder constructions confers vibrational force to the container.

39. The assembly of claim 37, wherein the means for providing mechanical stress comprises an electro engine connected to the container, the engine spinning a mass element, wherein the mass is heterogeneously distributed around the spinning axis whereby the spinning of the mass cause a repetitive displacement of mass conferring vibrational force to the container.

40. The assembly of claim 37, wherein the means for providing mechanical stress comprises a permanent magnet and means for providing movement of the magnet relative to a magnetizable body comprised in the container.

41. Use of a coherent stained fabric as cover on an array of at least two, preferably at least 24, more preferably at least 96 containers for testing cleaning ingredients.

42. Use of the assembly of any of the claims 30-40 for testing cleaning ingredients.

43. A method for testing cleaning effect of a non-cellulolytic enzymes comprising:

- (a) Preparing liquid samples comprising the non-cellulolytic enzyme in an assembly according to any of the claims 30-40, with the proviso that the container does not contain a solid body capable of moving inside the container,
- (b) repeatedly applying liquid sample to the stained fabric,
- (c) evaluating the cleaning effect of applying solution on the stained fabric.

44. The assembly of claim 40, wherein the assembly comprises:

- (a) a rotate able horizontal support surface mounted on a vertical axis, said surface comprising means for fastening the container at a position different from the rotational centre and
- (b) a permanent magnet connected to the axis, enabling variation in the magnetic field applied to the container upon rotating the support.

45. An assembly comprising at least one engine capable of spinning at least one heterogeneously distributed mass, said engine rigidly connected to a rigid holder plate for holding an array of containers and said engine connected to a rigid lid plate via a first set of flexible elements and wherein the holder plate and the lid plate forms a slit for positioning an array of containers and

wherein said holder plate is connected via a second set of flexible elements to a base construction, said second set of flexible elements allowing the vibrational movements of the holder plate, the lid plate, the engine and the first set of flexible elements.

5 46. The assembly of claim 45 further comprising means for compressing the first set of flexible elements enabling insertion or removal of an array of containers.

47. The assembly of claim 45 further comprising means for controlling the rotational speed of the engine.

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48. The assembly of claim 45 further comprising means for controlling the temperature of the holder plate.

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